

# UCLA iGEM 2014 – EQUIPMENT LIST

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[The following is a list of EQUIPMENT necessary for the collection of recombinant silk protocols. Details of each product are given in addition to purchasing locations and catalog numbers]

## EQUIPMENT

**20-ml syringes** (BD Medical, cat. no. 301031)  
**0.22-µm syringe filters** (Nalgene, cat. no. 190-2520)  
**Electroporator 2510** (Eppendorf, cat. no. 940000009)  
**Electroporation cuvettes with 0.4-cm gap** (Bio-Rad, cat. no.165-2088)  
**Sterile 100 mm 25 mm Petri dishes** (Midwest Scientific, cat. no.TPP 93100)  
**Laminar airflow hood** (Labconco, cat. no. 3600000)  
**Shaking incubator set at 37 1C/220 r.p.m.** (VWR, cat. no. 35962-093)  
**1.7-ml microcentrifuge tubes** (Midwest Scientific, cat. no. AVSS1700)  
**Surgical blades no. 21** (Henry Schein, cat. no. 100-3535)  
**UV-visible light Beckman-Coulter spectrophotometer** (VWR, cat. no.BK517941)  
**Sorvall refrigerated centrifuge** (Thermo Fisher Scientific Inc., cat. no.75-004-377)  
**500-ml centrifuge bottles with screw caps** (Nalgene, cat. no. 3120-9500)  
**15-ml conical tubes** (Genesee Scientific, cat. no. 21-103)  
**SpectraPor 12,000–14,000 molecular weight cutoff dialysis tubing** (Spectrum Laboratories Inc, cat. no. 131300)  
**2-liter glass Erlenmeyer flasks** (Kimble-Chase, cat. no. 265002000)  
**4-liter beakers** (Kimble-Chase, cat. no. 140054000)  
**Analytical balance** (Mettler Toledo, cat. no. XP105DR)  
**10-ml Polyprep chromatography columns** (Bio-Rad, cat. no. 731-1550)  
**Ni-NTA His-bind resin** (Novagen, cat. no. 70666)  
**Speed VAC lyophilizer** (Labconco)  
**Bench-top shaking platform** (VWR, cat. no. 14005-830)  
**Plastic containers (WALMART Stores)**  
**Ultra Clear Cellophane** (Research Products International Corp., cat. no. 1090)  
**Mini-PROTEAN3 Cell and Blotting System** (Bio-Rad, cat. no. 165-3323)  
**Mini Trans-Blot Electrophoretic Transfer Cell** (Bio-Rad, cat. no. 170-3930)  
**PVDF/Immobilon P membrane** (Bio-Rad, cat. no. 162-0174)  
**Film-developer mini-medical series** (AFP Imaging Corp., cat. no.9992305300)  
**Autoradiography cassette** (Fisher Scientific, cat. no. FBXC810)  
**1.5-ml sample glass vials with lids** (VWR, cat. no. 66009-884)  
**Vortex mixer** (VWR, cat. no. 58816-121)  
**10.8-cm microforceps** (Fisher Scientific, cat. no. 08 953E)  
**Spinning apparatus\***  
**Red PEEK(polyetheretherketone) tubing with an internal diameter of 0.127 mm** (Upchurch Scientific, cat. no. 1535)  
**1-ml Hamilton Gastight syringe** (Hamilton Company, cat. no. 81330)  
**Super Flangeless Ferrule 1/16-inch ETFE ferrule with stainless steel lock ring**  
(Scientific Equipment Products Co., cat. no. P-259)  
**Harvard Pump 11 plus single syringe** (Harvard Apparatus, cat. no. 702208)

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## \*SPINNING APPARATUS SETUP:

1. Attach a **10-cm-long red PEEK tubing** with an internal diameter of **0.127 mm** to a **1-ml Hamilton Gastight syringe** using a **Super Flangeless Ferrule, 1/16-inch ETFE ferrule with stainless steel lock ring**.
2. Mount the syringe on the **Harvard Pump 11 Plus Single Syringe** according to the manufacturer's instructions.
3. Set the pump speed rate at **2–10  $\mu\text{l min}^{-1}$** .
4. For fiber extrusion, prepare the **90% isopropanol coagulation bath** (see REAGENT SETUP PROTOCOL), and place the PEEK tubing so that the tip just breaks the surface tension of the coagulation bath.

*This protocol is adapted from the following source:*

Teule, F., Cooper, A.R., Furin, W.A., Bittencourt, D., Rech, E.L., Brooks, A., & Lewis, R.V. "A protocol for the production of recombinant spider silk-like proteins for artificial fiber spinning." *Nature Protocols*, Vol. 4, No. 3, 19 February 2009 (online). Pages 341-355. Nature Publishing Group. doi:10.1038/nprot.2008.25